REMARKS

This amendment is responsive to the Office Action dated December 12, 2005. Applicant has amended claims 1, 9, 10, 11, 17, 23, 26, 33, and 34, and canceled claim 22. Claims 1–21 and 23–39 are now pending.

Claim Rejection Under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1–8, 12, 13, 15–21, 23, 25–32 and 39 under 35 U.S.C. 102(e) as being anticipated by Ikefuji et al. (US 6,624,743). Applicant respectfully traverses the rejection to the extent such rejection may be considered applicable to the amended claims. Ikefuji et al. fails to disclose each and every feature of the claimed invention, as required by 35 U.S.C. 102(e), and provides no teaching that would have suggested the desirability of modification to include such features.

For example, Ikefuji et al. fails to teach or suggest a radio-frequency identification (RFID) tag that includes a sensing circuit to sense electromagnetic coupling with a neighboring RFID tag and activate the switching circuit in response to the sensed electromagnetic coupling, as recited by Applicant's amended claims 1 and 26. Moreover, Ikefuji et al. fails to teach or suggest a method comprising sensing an amount of electromagnetic coupling between the RFID tag and a neighboring RFID tag, and dynamically changing the resonant frequency of the main antenna based on the sensed amount of electromagnetic coupling, as recited by Applicant's claim 17 as amended.

In the Office Action, the Examiner acknowledged that Ikefuji et al. fails to disclose sensing electromagnetic coupling with a neighboring tag.[1] In fact, Ikefuji et al. contains no teaching or suggestion of any element even capable of sensing electromagnetic coupling with a neighboring RFID tag. Ikefuji et al. accordingly fails to disclose activating a switching circuit in response to the sensed electromagnetic coupling.

Instead, Ikefuji et al. merely teaches a non-contact integrated circuit (IC) card that "sequentially" switches a resonance frequency of a resonance circuit. Ikefuji et al. describes the resonance frequency as being automatically adjusted, for example during manufacture, at a given

[1] Office Action dated December 12, 2005, at page 5.

time, or upon a given number of uses of the IC card.[2] Ikefuji et al. fails to teach or suggest sensing electromagnetic coupling with a neighboring RFID tag, let alone activating the switching circuit in response to the sensed electromagnetic coupling. Rather, the IC card of Ikefuji always switches resonance frequency whether any electromagnetic coupling occurs or not. In fact, the IC card of Ikefuji sequentially switches the resonance frequency even when no other tags are present. Applicant's claimed embodiments of a tag that incorporates a sensing circuit and a switching circuit to dynamically change the resonant frequency of a tag upon sensing electromagnetic coupling with a neighboring tag is novel and non-obvious over such teachings. Ikefuji provides no mechanism or even a suggestion of a mechanism for achieving such functionality.

In order to support an anticipation rejection under 35 U.S.C. 102(b), it is well established that a prior art reference must disclose each and every element of a claim. This well known rule of law is commonly referred to as the "all-elements rule."[3] If a prior art reference fails to disclose any element of a claim, then rejection under 35 U.S.C. 102(b) is improper. [4]

Ikefuji fails to disclose each and every limitation set forth in claims 1–8, 12, 13, 15–21, 23, 25–32 and 39. Claims 2–8, 12, 13, 15, 16, 18–21, 23, 25, 27–32, and 39 are dependent on the independent claims discussed above with respect to 35 U.S.C. 102, and are patentable for the same reasons. For at least these reasons, the Examiner has failed to establish a prima facie case for anticipation of Applicant's claims 1–8, 12, 13, 15–21, 23, 25–32 and 39 under 35 U.S.C. 102(b). Withdrawal of this rejection is requested.

Claim Rejection Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 9–11, 14, 22, 24 and 33–38 under 35 U.S.C. 103(a) as being unpatentable over Ikefuji et al. Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims,

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[2] *See* Ikefuji et al., col. 9, ll. 33–45.
[3] *See Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 USPQ 81 (CAFC 1986) ("it is axiomatic that for prior art to anticipate under 102 it has to meet every element of the claimed invention").
[4] *Id. See also Lewmar Marine, Inc. v. Barient, Inc.*, 827 F.2d 744, 3 USPQ2d 1766 (CAFC 1987); *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (CAFC 1990); *C.R. Bard, Inc. v. MP Systems, Inc.*, 157 F.3d 1340, 48 USPQ2d 1225

and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

With reference to claims 9 and 33, as explained above, Ikefuji et al. lacks any teaching that would have suggested an RFID tag having a sensing circuit that activates a switching circuit to selectively increase or decrease the resonant frequency of the main antenna based on the sensed amount of electromagnetic coupling. In the Office Action, the Examiner stated that since Ikefuji discloses the automatic switching of the resonance frequency by selectively increasing or decreasing the resonant frequency, it would therefore be obvious "that the resonant frequency is changing its frequency when there is a need to provide a more efficient communication."[5] Applicant respectfully disagrees with this conclusion. One of ordinary skill in the art would not find it obvious based on Ikefuji et al. to change the resonance frequency "when there is a need" to provide more efficient communication, since Ikefuji et al. merely teaches automatically and sequentially adjusting the resonance frequency to select an optimum resonance frequency without regarding to any sensed conditions. Thus, in no manner does the Ikefuji device switch only "when there is a need," as asserted by the Examiner. The sequential switching of resonance frequency described by Ikefuji et al. without regard to sensed electromagnetic coupling may actually consume power and interrupt communications.

As discussed above, Ikefuji et al. fails to teach or suggest a sensing circuit that senses an amount of electromagnetic coupling with the neighboring RFID tag and activates the switching circuit to selectively increase or decrease the resonant frequency of the main antenna based on the sensed amount of electromagnetic coupling. Based on the teachings of Ikefuji et al., one of ordinary skill in the art would be motivated merely to provide a tag that continuously and sequentially changes resonance frequency, thereby failing to recognize the benefits of a sensing circuit or even a need for such a circuit.

Applicant's claim 10 requires that the switching circuitry comprises a transistor that turns on *when a current in the sensing circuit exceeds a threshold value*. In regard to claim 10, the Examiner stated that Ikefuji et al. discloses a switching circuitry that comprises a transistor that

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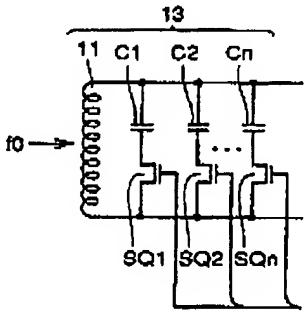
(CAFC 1998); *Oney v. Ratliff*, 182 F.3d 893, 51 USPQ2d 1697 (CAFC 1999); *Apple Computer, Inc. v. Articulate Systems, Inc.*, 234 F.3d 14, 57 USPQ2d 1057 (CAFC 2000).

[5] Office Action dated December 12, 2005, at page 5.

turns on when a current in the sensing circuit exceeds a threshold value.[6] The Examiner cited FIG. 3 of Ikefuji et al. as support for this conclusion. To the contrary, FIG. 3 of Ikefuji et al. illustrates a resonance circuit 13 that includes condensers C1–Cn (capacitors) and transistors SQ1–SQn, used to tune the antenna 11 itself to different resonance frequencies.[7]



Resonance circuit 13 of FIG. 3, shown above, is not a sensing circuit that senses an amount of electromagnetic coupling with neighboring RFID tags. Consequently, Ikefuji et al. does not teach a transistor that turns on when a current level in a sensing circuit exceeds a threshold, as recited in claim 10. The transistors of FIG. 3 (SQ1–SQ3) are sequentially turned on without regard to any form of a sensing circuit, let alone a current level in a sensing circuit representative of an amount of electromagnetic coupling with a neighboring tag.

Moreover, one of ordinary skill in the art would find no motivation in Ikefuji et al. to modify the system described by Ikefuji et al. to achieve Applicant's invention as claimed. As discussed, Ikefuji et al. contains no suggestion of a sensing circuit to sense electromagnetic coupling with neighboring RFID tags. For example, to the extent Ikefuji et al. could be applied to address the problem of tag-to-tag coupling, Ikefuji et al. suggests pre-determined, sequential switching of the resonant frequency, which may lead to power consumption and other issues. As a result, Ikefuji et al. does not provide a motivation to one of ordinary skill in the art to modify the Ikefuji device to provide a sensing circuit to sense electromagnetic coupling with a neighboring RFID tag, let alone activate the switching circuit in response to the sensed electromagnetic coupling, as recited by Applicant's independent claims as amended.

[6] Office Action dated December 12, 2005, at page 5.
[7] *See* Ikefuji et al., at col. 5, ll. 49–62.

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 9–11, 14, 24 and 33–38 under 35 U.S.C. 103(a). Withdrawal of this rejection is requested.

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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